It is must be understood that the architectural and operational embodiments described herein are exemplary of a plurality possible to provide the same (or equivalent) general features, characteristics, and general system operation. Therefore, while there have been described the currently preferred embodiments of the present invention, those skilled in the art will recognize that other and further modifications may be made without departing from the spirit of the present invention, and it is intended to claim all modifications and variations as fall within the scope of the appended claims.

What is claimed is:

1. A machine readable assaying arrangement, comprising:

(a) an assay card including a substrate having a surface; and

(b) at least one assaying indicia provided upon the surface of the assay card and having an initial encoded value representing a machine readable source of data, the assaying indicia capable of detecting and optically signaling the presence of a desired state, wherein once the desired state is detected the assaying indicia forms a second machine readable encoded value, different from the initial encoded value;

(c) each assaying indicia including at least one analysis element, at least one fixed element and at least one blank region therebetween, which collectively form the initial and second encoded values; each analysis element capable of changing from a first state having a first reflectance level to a second state having a second substantially different reflectance level when the desired state is detected, thereby providing an optical change in reflectance producing a change from the initial encoded value to the second encoded value.

2. The machine readable assaying arrangement according to claim 1, wherein a plurality of analysis elements are provided, each capable of monitoring a specific parameter and an associated desired state.

3. The machine readable assaying arrangement according to claim 1, wherein a machine readable source of data is provided by at least one bar code symbol composed of the analysis elements, the fixed elements, and the blank regions.

4. The machine readable assaying arrangement according to claim 3, wherein the analysis elements are arranged in a pattern whereby an associated reflective characteristic is formed by a plurality of the analysis elements assuming the first reflective state, while a second mutually exclusive plurality of the analysis elements are assuming the second reflective state.

5. The machine readable assaying arrangement according to claim 3, wherein the substrate further includes at least one of:

a) quality control indication means capable of determining if the changeable assaying indicia of the assay card are capable of functioning properly;

b) assay card production information; and

c) assay card identification information.

6. The machine readable assaying arrangement according to claim 5, wherein quality control indication means, assay card production information, and assay card identification information, are each provided as a machine readable source of data.

7. A machine readable, optically changeable assaying indicia provided upon a substrate for monitoring a present or past desired state of a monitored parameter, the assaying indicia comprising:

(a) at least one fixed element;

(b) at least one blank region; and

(c) at least one analysis element, which when considered along with the fixed elements and blank regions, establishes an initial encoded value representing a machine readable source of data;

(d) each analysis element capable of changing from a first state having a first reflectance level to a second state having a second substantially different reflectance level when the desired state is detected, thereby optically signaling the presence of the desired state, wherein once the desired state is detected the assaying indicia forms a second machine readable encoded value, different from the initial encoded value, that is machine readable by a suitable reading apparatus.

8. The machine readable, optically changeable assaying indicia according to claim 7, wherein the analysis elements, fixed elements and the blank regions each have a substantially elongated rectangular shape.

9. The machine readable, optically changeable assaying indicia according to claim 8, wherein the machine readable source of data is provided by at least one bar code symbol comprised, at least in part, by the analysis elements.

10. The machine readable, optically changeable assaying indicia according to claim 8, wherein each respective analysis element, upon the detecting of a respective desired state, changes from the first state to the second state, and maintains the second state, even after the desired state is no longer present and detected.

11. A machine readable assaying system comprising:

(a) an assay card including a substrate having a surface;

(b) assaying indicia impregnated upon the surface of the assay card and having an initial machine readable encoded value, the assaying indicia capable of detecting and optically signaling the presence of a desired state, wherein once the desired state is detected the assaying indicia forms a second machine readable encoded value; and

(c) an assay card reader arranged to read respective assay cards, and the assaying indicia located thereupon, to determine the encoded value provided by the assaying indicia.

12. The assaying system according to claim 11, wherein the assay card reader includes:

a) an assay card reader having a scanner unit capable of optically scanning and reading the source of data provided by the assaying indicia; and

b) computing means for receiving the source of data from the assay card reader and determining assay results.

13. The assaying system according to claim 12, wherein the computing means includes a display means to display to an operator the assay results provided by the reading of assaying indicia.

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14. The assaying system according to claim 11, said indicia responsive to contact with a urine sample as a part of a drug screen.

15. An assay arrangement designed for drug screening of an individual, said arrangement comprising:

a substrate having a surface adapted to be contacted with a urine sample from said individual; and

at least one assaying indicia provided upon said surface and having an initial encoded value, said indicia capable of changing to a second encoded value in response to said contact with said sample,

said assaying indicia being machine readable and not human readable, so that others viewing said indicia after said contact with said sample are unable to interpret the results of the individual's drug screening assay.

16. The arrangement of claim 15, said indicia including at least one analysis element, at least one fixed element, and at least one blank region therebetween.

17. The arrangement of claim 15, wherein a plurality of analysis elements are provided.

18. The arrangement of claim 15, wherein the substrate further includes at least one of:

a) quality control indication means capable of determining if the changeable assaying indicia of the assay card are capable of functioning properly;

b) production information about said substrate; and

c) identification information about said substrate.

19. The arrangement of claim 18, wherein quality control indication means, production information, and identification information, are each provided as a machine readable source of data.

20. A method of drug screening an individual, comprising the steps of:

obtaining a urine sample from said individual;

providing an assay member supporting a substrate having a surface adapted to be contacted with said urine sample;

contacting said substrate with said urine sample;

at least one of assaying indicia provided upon said surface and having an initial encoded value, said indicia capable of changing to a second encoded value in response to said contact with said sample,

said assaying indicia being machine readable and not human readable, so that others viewing said indicia after said contact with said sample are unable to interpret the results of the individual's drug screening assay;

machine reading said assaying indicia after said urine contacting step to ascertain the drug screen results; and

storing said drug results in electronic memory.

21. The method of claim 20, including the step of transmitting said drug screen results to a remote location.